

**Battle Command Training Program (BCTP):
Requirements Analysis**

**Jack A. Briscoe
J. Ward Keesling**

BDM Federal, Inc.

<p>This report is published to meet legal and contractual requirements and may not meet ARI's scientific or professional standards for publication.</p>

July 1996

United States Army Research Institute for the Behavioral and Social Sciences

Approved for public release; distribution is unlimited.

19960909 003

DTIC QUALITY INSPECTED 1

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency Under the Jurisdiction
of the Deputy Chief of Staff for Personnel

EDGAR M. JOHNSON
Director

Approved for Release by NSA on 09-11-2013 pursuant to E.O. 13526

NOTICES

DISTRIBUTION: This report has been cleared for release to the Defense Technical Information Center (DTIC) to comply with regulatory requirements. It has been given no primary distribution other than to DTIC and will be available only through DTIC or the National Technical Information Service (NTIS).

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The views, opinions and findings in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE July 1996	3. REPORT TYPE AND DATES COVERED Interim Report 07/14/92 - 02/15/93	
4. TITLE AND SUBTITLE Battle Command Training Program (BCTP): Requirements Analysis			5. FUNDING NUMBERS MDA903-92-D-0075-0001 3413 CO2 623007 A794	
6. AUTHOR(S) Jack Briscoe J. Ward Keesling				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) BDM FEDERAL INC. DOD CENTER MONTEREY BAY 400 GIGLING ROAD SEASIDE, CA 93955			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES 5001 EISENHOWER AVENUE ALEXANDRIA, VA 22333-5600			10. SPONSORING/MONITORING AGENCY REPORT NUMBER Contractor Report 96-19	
11. SUPPLEMENTARY NOTES The COR is Michael R. McCluskey. This report is published to meet legal and contractual requirements and may not meet ARI's scientific or professional standards for publication.				
12a. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This requirements analysis was performed to determine what issues were of greatest interest to the potential community of users of a BCTP database. This information will help to prioritize the incorporation of BCTP data into the ARI-POM Archive and will inform the organization of the data to facilitate access to the relevant data items. Integration of the BCTP database into the CTC Archive will greatly expand the scope of possible analysis, and enable more systematic examination of issues at all applicable echelons. The overall model for performance evaluation and feedback that forms the basis for the CTC Archive at POM incorporates information about both process (tasks performed by units and individuals) and outcomes (results on the battlefield: casualties inflicted and sustained, terrain won or lost, etc.). This model can apply equally to information from BCTP.				
14. SUBJECT TERMS Command and Control, Maneuver, INTEL, Air Defense, MCS, CSS Aviation Center, Intelligence Center, Signal Center, Armor School, CASCOM, Take Home Package (THP)			15. NUMBER OF PAGES	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

Research Product

**BATTLE COMMAND TRAINING PROGRAM (BCTP)
REQUIREMENTS ANALYSIS**

Jack Briscoe
BDM International, Inc.

J. Ward Keesling
PRC, Inc.

Submitted by Howard H. McFann, Chief
Presidio of Monterey Field Unit
and
Jack Hiller, Director
Training Research Laboratory
and
Mr. Michael R. McCluskey, Contracting Officer's Representative



22 January 1993

U. S. Army Research Institute

BCTP Database Requirements Analysis

Table of Contents

I. Introduction	1
II. Design of the Requirements Analysis	2
III. Identified Issues	3
IV. Discussion	3
Appendix A: Issues Identified by Aviation Center	A-1
Appendix B: Issues Identified by Intelligence Center	B-1
Appendix C: Issues Identified by Signal Center	C-1
Appendix D: Issues Identified by Armor School	D-1
Appendix E: Issues Identified by CASCOM	E-1

List of Tables

Table 1. List of Invited Participants	2
Table 2. Identified Issues	4

BCTP Database Requirements Analysis

I. INTRODUCTION

Background

The Combat Training Centers (CTCs) have two missions:

- Provide tough, realistic combined arms training in which the unit to be trained must exercise all of the battlefield operating systems (BOSs) in accordance with air land battle doctrine.
- Provide a data source for training, doctrine, organization and equipment improvement.

In fulfilling the first mission, the CTCs generate information that can be used to fulfill the second mission. They record the performance of the unit being trained with respect to various processes (e.g performance of tasks) and outcomes (e.g. battle damage assessments), which provides feedback to the unit about the efficacy of its home station training program. This same information, gathered on a series of units over time, can be used to make inferences about the overall status of training, doctrine, organization, leadership and materiel.

The Army Research Institute for Behavioral and Social Sciences (ARI) is tasked to maintain archives and databases concerning performance at the CTCs in its Field Unit at the Presidio of Monterey (POM). These databases and archives are used to support the second mission of the CTCs.

The Battle Command Training Program (BCTP) is considered to be a CTC, specializing in training exercises for command staff training at the Brigade, Division and Corps levels. These training exercises, known as Warfighter Exercises (WFXs), and the system that supports them, are described extensively in the first section of this report. The data that are generated by these exercises are of particular interest to the Field Unit of ARI at Ft. Leavenworth which is tasked to examine issues concerning Command and Control.

Presently, data generated by the BCTP exercises are not part of the ARI-POM Archive data base. The purpose of this report is to establish the framework for integrating the BCTP data into the data base at ARI-POM. The primary advantage to integrating this data into the ARI-POM Archive would be that all echelons operating at the tactical level (see TRADOC PAM 11-9) would be incorporated into this Archive. Thus, a problem with a tactical-level system (i.e. one of the BOSs) can be examined throughout all the relevant echelons.

Objective

This requirements analysis was performed to determine what issues were of greatest interest to the potential community of users of a BCTP database. This information will help to prioritize the incorporation of BCTP data into the ARI-POM Archive and will inform the organization of the data to facilitate access to the relevant data items.

II. Design of the Requirements Analysis

The requirements analysis was conducted by soliciting input from Army organizations having an interest in data arising from the WFXs conducted by BCTP. To identify these organizations, a matrix was created with the seven BOS as columns and the elements of DOTMLS (Doctrine, Organization, Training, Materiel, Leadership and Soldiers) as rows. Proponents of the combinations of BOS and DOTMLS were entered into the appropriate cells. Table 1 shows the result of this effort. ARI Field Units at Ft. Leavenworth and Monterey were also identified as having an interest in these data.

Table 1: BCTP Working Group Invited Participants

Combined Arms Center
Training and Doctrine Command
CASCOM
Air Defense Artillery School
Armor School
Army Aviation Center
Engineer School
Field Artillery School
Infantry School
Army War College
Intelligence Center
Signal Center
FORSCOM
ARI - Presidio of Monterey Field Unit
ARI - Ft. Leavenworth Field Unit

CALL invited these organizations to send representatives to a BCTP Data Working Group Meeting which was held on Dec 9, 1992. The read-ahead package for that meeting has been presented to ARI as a separate deliverable.

Eight agencies were represented at the meeting: CASCOM, Intelligence Center, Infantry School, Engineer School, Army Aviation Center, Armor School, Air Defense Artillery School, and ARI (both POM and the Field Unit at Ft. Leavenworth were represented). Five of the 16 participants were from ARI-Leavenworth or from contractors supporting that Field Unit. They participated in the review of issues identified in the breakout sessions, and their input was incorporated into the identification of issues.

III. Identified Issues

Representatives from the Aviation Center, the Intelligence Center, the Signal Center, the Armor Center and CASCOM developed lists of issues and other areas of concern during the meeting. These are presented as Appendices A through E. The main purpose of the meeting was to come to some consensus about the issues that could be addressed through the use of data from BCTP. Table 2 lists these issues by BOS. These issues would apply equally well to all the CTCs: This reinforces the idea that the BCTP database should be integrated with the databases in the ARI-POM Archive to facilitate examining issues at all applicable echelons.

Data collected at BCTP are not currently focussed on providing information relevant to these issues. Of course, data relevant to these issues can be discovered in the data streams coming from BCTP, but it is not typically gathered systematically. For example, the OC observations, which are likely to be the richest source of information about performance at BCTP, are free-form in content and format. An OC may record information related to one of these issues on one mission, but direct his attention to other issues on other occasions.

The next section presents a discussion of some of the parallels between BCTP data and those arising from other CTCs and illustrates how an analyst would use similar procedures to address an issue of interest.

IV. Discussion

The overall model for performance evaluation and feedback that forms the basis for the CTC Archive at POM incorporates information about both process (tasks performed by units and individuals) and outcomes (results on the battlefield: casualties inflicted and sustained, terrain won or lost, etc.). This model can apply equally to information from BCTP.

Each CTC prepares a final report on the unit's performance (called the Take Home Package at the NTC and the Final Exercise Report at BCTP). This is a rich source of information about both task performance and outcomes.

Over time, the Take Home Package (THP) from NTC has come to have an expectable structure and format so that a military analyst can find specific information relatively quickly. The information is organized by BOS so that it is relatively easy to examine the performance of a particular BOS throughout a rotation. Typically, the take home package does not refer to all of the specific tasks (such as the MTP tasks) within a BOS. To determine whether some of these specific tasks were performed to standard, the military analyst would have to refer to other information gathered from the NTC such as the AAR tapes, the orders and graphics prepared by the BLUFOR unit, or the recordings of communications on various nets.

The Final Exercise Report (FER) produced by BCTP is converted by analysts from CALL into a database (the FER database) that provides a high degree of standardization to the information in this report. By tagging sections of the text with keywords indicating the BOS, echelon and performance evaluation, analysts can search through large quantities of information for elements related to issues of interest. Again, however, there may be little information specific to a task or set of tasks in the FER and the analyst will have to consult other data sources to determine the level of performance. BCTP provides

some information in parallel to that obtained from NTC (facilitating its incorporation into the same Archive): AAR tapes and various orders and graphics.

In a separate document (Concept for a BCTP Database) the types of data arising from BCTP are more systematically compared to the data types already incorporated into the CTC Archive at ARI-POM. The majority of these data types are similar to data coming from the other CTCs and may be handled in the same manner for incorporation into the CTC Archive at ARI-POM. Much of the data in the current Archive will soon be accessible remotely using off-the-shelf, low cost, hardware and software. By incorporating the BCTP data into the ARI-POM Archive, the corresponding information from BCTP would also become easily available to military analysts at virtually any location. Integration of the BCTP database into the CTC Archive will greatly expand the scope of possible analyses, and enable more systematic examination of issues at all applicable echelons.

Table 2: Issues organized by BOS

<p>Command and Control</p>	<p>Are signal officers effectively planning and executing the use of Combat Net Radios?</p> <p>(Many questions related to the use of specific systems during BCTP: TACSAT, SINCGARS, IHFR -- were they used, and how well were they used?)</p> <p>How comprehensive is the planning concerning signal assets? Are all assets considered? Do Signal Officers understand the scheme of maneuver?</p> <p>How are radio frequencies allocated and managed?</p> <p>Does the unit have an SOI (Signal Operating Instructions)? Is it effective?</p> <p>Is the 1/3 - 2/3 rule followed in planning operations?</p> <p>How effective is the (brigade) estimate process?</p> <p>How accurate and complete is the commander's statement of intent?</p> <p>How effective are (brigade) TAC operations?</p> <p>How effective is the command staff at synchronizing battlefield systems?</p>
<p>Maneuver</p>	<p>How effective are planning and execution of counter-recon?</p> <p>How do units establish criteria for the commitment of reserves?</p> <p>How effective are (brigade) security operations?</p>
<p>INTEL</p>	<p>What contributes to scout survivability?</p> <p>What kills scouts?</p> <p>How effective are planning and execution of recon?</p> <p>How effective are UAVs (unmanned air vehicles)?</p> <p>How effective is intelligence gathering? processing? dissemination?</p>

Table 2: Issues organized by BOS (continued)

Air Defense	<p>How is overall (joint, combined, host nation, Army) airspace management being assessed/analyzed at Corps/Div?</p> <p>How effective are key airspace managers at Corps/Div level at BCTP? (How does this reflect on the training they receive?)</p>
MCS	<p>How effective is tactical employment of smoke?</p> <p>How much consideration is given to MCS in the estimation process?</p> <p>How aware are commanders of engineer strengths, limitations and time factors?</p>
CSS	<p>What was the consumption rate of various classes of supply?</p> <p>What classes of supply (should have been/ had to be/ were) requisitioned at different phases of the battle?</p> <p>How does the location of logistic and personnel elements influence the outcome of the battle?</p> <p>How available were CSS transportation assets (trucks and aircraft)?</p> <p>How effectively were transportation assets managed?</p> <p>What percentage of the force died of wounds? Related to location of ambulance exchange points? Related to method of MEDEVAC?</p> <p>How effectively are replacement personnel tracked?</p> <p>What plans are made for handling EPWs?</p> <p>How were MPs used during the battle?</p>

APPENDIX A: ISSUES IDENTIFIED BY USA AVIATION CENTER

- Are UAVs being employed/played during BCTP yet? Effectiveness? Coordination measures? A²C² of UAV?
- How is overall (joint, combined, host nation, Army) airspace management being assessed/analyzed at Corps/Div?
- A spinoff of airspace management is air traffic control/services (US Army)?
- The training level of key airspace managers @ Div/Corps level during BCTP? Effectiveness?
- The integration of all C² systems (FAADC³¹, AMPS, MCS, etc) --Training + Organization.

APPENDIX B: ISSUES IDENTIFIED BY INTELLIGENCE CENTER

General Concerns about the Database:

- Allow USAIC & FH to assist in the development of the keyword architecture for intelligence that would be used to organize the database.
- Merge the "specific issues" into a menu associated with each of the keywords. These would also assist BCTP controllers in developing their observations. The list below shows some issues that USAIC & FH is particularly concerned with at the present.
- Allow the MI-BCTP O/Cs to assist in the development of the keyword architecture with associated menus of issues. Have the BCTP O/Cs develop their observations consistent with this architecture.
- Develop an annual report on the status of the keyword architectures, issues for each keyword, and trend-line observations associated with each issue/keyword. Deliver these reports to the TRADOC centers and BCTP O/Cs for review and recommendations for updating.
- Ramp up the dissemination devices from the BCTP databases:
 - CALL bulletins are good, but continually request input from CTC O/Cs and from the TRADOC centers.
 - Print out selections from the O/C observations databases by BOS each year for use and review by the Tradoc centers. This could accompany the keyword architecture and issues report mentioned above. USAIC & FH should be able to handle the entire database, even if it is several linear feet.
 - Develop and disseminate the procedures that will enable TRADOC centers to go "on-line" to your database from remote sites. Non-CALL users should not be able to delete or modify the databases, but should have access to a bulletin board in order to comment on the database. The bulletin board should be segmented to correspond to the keyword/issues architecture.
- POC is CPT Jerry Schlabach, Chief of Doctrine Branch, DTIMS, USAIC&FH; Avn 821-4005/4008.

These issues are stated as a subset of "doctrinal principles" - not a comprehensive checklist. (Don't use it to evaluate a unit). Rather we believe these principles are not being executed well in the field. We want to know what techniques are working and not working and why.

DOCTRINAL ISSUES:

Direct Collection of INTEL:

IRs: Are intelligence requirements generated exclusively from the wargaming session? Can the collection (requirements manager) manager "justify" each IR by articulating the warfighting decision that will be served by the answer to each IR? (for example: "The answer to IR #9b will prompt the G4 to move the MSR to the alternate route 3" or, "the answer to IR #3 will prompt a series of ground and air counterattacks at TAI/EA OSCAR, combined with DPICM and EW, and supported by SEAD operations and logistic push packages.")

Has the S2/G2 prioritized the list of IRs?

RFIs: Has the S2/G2 appropriately included the list of RFIs (RIIs) from subordinate and adjacent units? Have the RFIs been properly consolidated into the priority list of IRs?

IATs: Has the S2/G2 appropriately dealt with intelligence acquisition tasks from higher?

PIRs: Has the S2/G2 recommended PIRs to the commander exclusively from the list of IRs?

Synch: Has the S2/G2 developed a collection strategy to answer each PIR, IR, RFI, and IAT (Emphasis on the most important ten or so).

Has the S2/G2 developed deadlines for each requirement that is linked to warfighting decisions reflected in the BOS synchronization matrix and DST?

Has the S2/G2 developed strategies that will allow the intelligence system to answer each requirement in a timely manner? Will the warfighter be able to put the trigger in time?

Plan: Does the detailed collection plan reflect the appropriate emphasis on commander's priorities reflected in the synchronization plan?

Has the mission manager develop SORs in enough detail to drive collection assets in an appropriate manner?

Task: Has the mission manager developed intelligence acquisition tasks (IATs) in the intel annex that appropriately reflect the synchronization and collection plans?

Did the S2/G2 issue the intelligence synchronization plan and the event template as appendices to the intel annex?

Collect INTEL:

- MI Unit:** Has the MI unit S3 analyzed higher's intelligence synchronization plan to fully understand which warfighting decisions depend upon the Mi unit? Has the MI unit commander specified mission success in terms of the warfighting decisions of the supported combat commander?
- Track:** How well does the MI unit respond to changes in the intelligence synchronization plan? Is the unit always working to answer its allotted share of the Cdr's CCIR (PIR)?
- Non-MI:** How well do non-Mi Units satisfy their IATs?
- Timely:** Are subordinate units meeting the collection deadlines established in the intelligence synchronization plan with answers that are pertinent and relevant?

Process INTEL:

- Record:** How well does the S2/G2 record combat information into the intelligence journal, intelligence files, Order of Battle files, intelligence workbook, situation map, or coordinates register? Can analysts immediately pull complete categories of information by time, location, or subject?
- If the S2/G2 uses an automated assistant (ASAS or HAWKEYE), have the analysts mastered its use?
- Evaluate:** Does the S2/G2 efficiently and effectively categorize combat information according to reliability, credibility, and pertinence?
- If the S2/G2 is receiving large volumes of information, how well has the S2/G2 developed "pertinence filters" to quickly cull the most information for immediate analysis?
- Analyze:** Does the S2/G2 analyze well? In other words, can the S2 efficiently and effectively develop intelligence that is relevant, usable, timely, accurate, complete, objective, and predictive?
- How well can the S2/G2 acquire and maintain a "Common understand of the battlefield?"
How well does this understanding compare with what the enemy is actually doing?
- Prompts:** How quickly does the S2/G2 realize when conditions on the battlefield have changed enough to warrant mini-wargaming? In other words, does the S2/G2 protect the commander from surprise?
- IPB:** How well does the S2/G2 predict complete sets of COAs available to the enemy? Has the S2/G2 missed a pertinent enemy capability (COA)?

Disseminate and Use INTEL:

Filter: How well does the S2/G2 filter the total intelligence available to that which is most pertinent to decision makers? Are intelligence products custom built for making decisions?

Type: Has the S2/G2 categorized intelligence into the packages that are most convenient for use by decision makers? The six Intel METL tasks (forms of intelligence) are Indications & Warning, IPB, Situation Development, Target acquisition & Support to Targeting, Force projections, and BDA.

Use: If intelligence is tailored to a preplanned decision, how well does the S2/G2 get it to appropriate decision makers?

If intelligence requires new decisions, how well does the S2/G2 interact with decision-makers to best support timely full BOS synchronization?

If mini (or full) wargaming is required, how well does the S2/G2 represent and "fight" the COAs available to the enemy during wargaming?

How well does the S2/G2 track the evolving situation to generate new IRs, discard old ones, and reprioritize?

ORGANIZATION ISSUES:

G2: How well do the ASPS and CMD cooperate?

How well does the CIAS complete the ASPS? Has redundancy been eliminated?

How well does the TCAE interface with the ASPS and CMD?

How well does the new ACE organization replace the old ASPS-CMD-CIAS-TCAE structure?

Does electronic co-location work? (ACE is not physically co-located with the DMAIN)

— Does the CMISE effectively leverage the national intelligence system?

Does the JMISE effectively represent and leverage Army intelligence concerns for the mutual benefit of the joint and component organizations?

How well do the new DS company teams support maneuver brigades?

How well does the new MI Bn (-) support the maneuver division? Particular interest in the Ground Based common Sensor, Advanced Quickfix, and UAVs.

How well does the new AEB support the maneuver brigade? Particular interest in the Guardrail Common Sensor.

TRAINING ISSUES:

- MIOAC:** Should USAIC&FH spend more time teaching the process and procedures aspect of the intelligence system of systems (synchronization, IPB, wargaming, analysis, etc) or the physical systems aspect (use and employment of electronic sensors, etc)?
- General:** What are the trend-line performance weaknesses of MI soldiers in the field in relation to the proper execution of doctrine? What changes should USAIC& FH make in AIT, ANCOC, BNCOC, OBC, OTC, OAC, SQT, and CTT training?

MATERIAL ISSUES:

- Systems:** How well do units exploit the intelligence system of systems? Particular interest in the following systems:
- UAV (Both close range and short range)
 - JSTARs-GSM-CGS
 - Ground Based Common Sensor
 - Guardrail Common Sensor
 - Common Ground Station (CDR's Tactical Terminal)
 - Advanced Quickfix
 - ASAS
 - TROJAN SPIRIT
 - EPDS, ETUT, IPDS
- Coverage:** Does the new intelligence system of systems enable Cdrs to consistently see the full width and depth of the battlefield to targeting accuracy in near real time?
- Echelon:** Are units "pushing" and "pulling" Intelligence? In other words, are "stovepipes" developing?

LEADERSHIP ISSUES:

Are combat commanders fully aware of:

The capabilities and limitations of the intelligence BOS?

How intelligence is synchronized with other BOSs?

The intelligence system of systems architecture?

His role in focusing and prioritizing the intelligence BOS?

Are MI leaders consistently focusing the intelligence system of systems to warfighter needs?

SOLDIER ISSUES:

MOSs: How well does the new 97_ MOS work? (combination of 97B and 97E)

Should 35D officers (Tactical analysts - S2/G2) be required to have MI unit command (asset management), or should they specialize in supporting the combat commander?

APPENDIX C: ISSUES IDENTIFIED BY SIGNAL CENTER

Signal Support for Army Operations:

- Signal Support disciplines are Communications, Visual Information, Records Management, Printing/Publications. (FM 24-1)
- Signal Support is expanding to full integrated Military, Commercial, and host nation information systems.
- Signal Support planning is critical. Is the signal officer actively involved in the planning process? Does the signal annex to the Corps, Division, Bed OPlan accomplish the maneuver commanders needs?
- Force projection The signal assets must be tailorable and expandable to provide C4 from the onset of the operation. Is the Signal Support systems in place at Home station, during deployment, on the ground, and Redeployment. (We will deploy from CONUS based sites)
- Signal planning and execution of Join/Interop is critical. Signal officer planning and understanding of Joint Interface is important.
- At all levels, is the signal officer effectively using all his Signal Support Assets.
- The integrated communications architecture to support army operations is:
 - Army Common User System (ACUS). i.e. Mobile Subscriber Equipment (MSE)
 - Broadcast, i.e. Intel & weather.
 - Army Data Distribution Systems (ADDS i.i. JTIDS, EPLRS, Tactical Packet Network.
 - Combat Net Radio (CNR) i.e. SINCGARS, IHFT, and TACSAT.

Bottom line: Is the signal officer effectively planning and executing the above systems to support the battle.

- – Are the users of the signal support systems installing, operating, maintaining their signal equipments? Does the signal officer play in this situation?
- Who at the Corps and Division level is responsible for automation/data management? Is it the G3 or Signal Community?
- Who and what type of tactical record traffic plan is developed at Corps and Division level.
- Are Corps and Division using E-Mail, DDN, Tactical Packet Network? Who develops the plan and who manages it.

- Are Corps and Division using TACSAT in their warfighter Nets? If yes, what are the nets.
- Are Corps, Division, Bde, Bn using SINCGARS to pass data on the battlefield? If yes, what data are they passing and to support what mission.
- Are units using IHFR? What nets are using IHFR?
- Is there a Local Area Network in support of Corps/Division Command Post? Who developed and managed?
- Are the units (Corps, Division, Bde, Bn) using satellite, TROPO, HF, Radio relays/retrans? How are they employed? Who developed the plan? Did it support the commander's scheme of maneuver?
- Have the units developed a plan for information security? Who developed this plan? Who is the information security manager?
- Has the signal planner planned for communication range extension actions?
- Has the signal officer or staff addressed the following areas in his plan:
 - Combat Net Radio and diagrams
 - High frequency radio and diagrams
 - Very high frequency radio and diagrams
 - Ultra high frequency radio and diagrams
 - MSE and ATACCS systems and diagrams
 - TACSAT and diagrams
 - Messenger service (as appropriate)
 - Wire and switchboard diagrams
 - All other available signal support means
- Have the units deployed and trained in all areas of signal support before deployment? Have com exercises been conducted at garrison location.
- Has the signal officer or staff worked the issue of SOI development? Has the unit an effective organic or joint SOI? Can we talk to the people we need to talk to -- have the right people received copies of SOI?
- Has the signal officer or staff conducted requests for frequencies to conduct mission? Who makes this request? Who manages the frequencies? Frequencies must be planned to support TACSAT, MSE, CNR. Frequency allocation and management is a major concern.
- Is the signal officer and staff in direct coordination/planning with the Corps/Division staff elements? i.e. G1, G2, G3, G4, FSE, AWO, ect. The signal element must be "in-bed" with the rest of the Corps Division Staff.

- Does the signal officer and staff fully follow the scheme of maneuver. Does the signal officer understand the maneuver play so he can plan and execute signal support.

APPENDIX D: ISSUES IDENTIFIED BY ARMOR SCHOOL

- Bde Estimate Process
- Bde Recon/Counterrecon planning and execution
- Bde Deep fight planning and execution
- Establishing the criteria for the commitment of the Bde reserve
- Bde TAC operations
- Bde Rear CP operations/integration with FSB CP
- Bde synchronization planning and execution (i.e. FA, Engr, ADA etc)
- Command group operation/composition
- TOC operations
- Bde security operations
- Bde TSOP issues
- Bn wpns equip system status
- Functions within Combat trains
 - Are CCS overlays used?
 - Who is involved in the order's process?
- Company/team LOG pack operations
- TF 2406 data before, during and after battle
- Classes of supply requisition percentage prior, during, and after battle.
- Died of Wounds percentage during battle
- MSR security
- How MPs were used throughout tactical operations
- Current studies of Factors that lead to success/failure
 - Heavy/Light command and control operations

- Data base system IBM accessible/user friendly
- AGS survivability
- Alleged Airforce kills compared to ground force during Operation Desert Storm
- Tactical smoke employment
 - What percentage of successful operations can be contributed to smoke?
 - Units that successfully employ smoke
 - Smoke in the Offense/Defense
- Div Cavalry CSS Operations Lessons Learned
- Scout Survivability data by mission/vehicle type
- What kills Bn scouts?
- Interface with other proponent schools (i.e. Ft. Rucker)
 - White papers
 - Doctrinal studies

APPENDIX E: ISSUES IDENTIFIED BY CASCOM

- Availability of classes of supply: Capture STARTED Data.
- Written plans and orders to include FRAGS related to CSS Opns.
- Graphic control measures.
- Location of key leaders and primary CSS staff officers and operators.
- Location of ambulance exchange points
- Availability of high failure rate Class IX and major assemblies in limited supply.
- Tracking of casualty information by time and information flow from the initial casualty incident until it leaves the battalion level.
- Tracking of replacement personnel and crews from arrival in the Brigade support area to their duty assignment and the subsequent performance of their weapons system.
- Location of logistics and personnel elements.
- Availability of CSS transport vehicles and aircraft.
- Measure time that combat damage or RAM failure occurred and elapsed time to repair this failure to serviceable condition.
 - Type of recover operation
 - Type of recover problem
 - Time taken from notification until arrival at site to end of operation
 - Frequency of recovery of captured vehicles.
 - Towing distance with recovered vehicle
 - Availability and utilization of TMDE at unit and spt level
- Tracking of all recontamination activities and sites.
- - Total of all large caliber rounds fired per day/per engagement by weapons system type.
- Repair state of damaged/inoperable vehicles.
- Started Data and status/strength level after reconstitution, - reorg/regenerate.
- Method of MEDEVAC.
- Status of Medical Supplies
- Displacement times for FSBs/MSB.

- Consumption rates by unit, by mission, of specific classes of supply.
- Tracking of CSS resupply movements
- MOPP status of support units